



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,549	11/27/2001	Shunpei Yamazaki	07977-124003	1184

26171 7590 04/15/2005

FISH & RICHARDSON P.C.
1425 K STREET, N.W.
11TH FLOOR
WASHINGTON, DC 20005-3500

EXAMINER

LEE, GRANVILL D

ART UNIT PAPER NUMBER

2891

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,549

Applicant(s)

YAMAZAKI ET AL.

Examiner

Granvill D. Lee, Jr

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/22/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment filed on 11/27 2001 has been received and acknowledged to be found unpersuasive in view of the prior art of record.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishimura et al. (US Pat. 5,514,880) in view of Chen et al. (US. Pat. 4,905,073)

In view of claims 1, 4, 7, 10, 13 and 16, SRAM (static read access memory) comprising: a substrate (Fig. 4 #1), a pair of cross-coupled (Col. 1 lines 55-65) driver transistors (Fig. 83 Q1 and Q3) formed on the substrate, a pair of access transistors (Q5 and Q6), a pair of lines electrically connected (#33 and #34) to the coupled driver transistors through the access transistors, respectively; with line transistors, wherein at least each electrically connected to the pair of access of the cross-coupled transistors comprises a crystalline

Art Unit: 2891

semiconductor film formed on an insulating surface (#42) over the substrate, the crystalline semiconductor film having a mono domain region in which a channel formation region is formed (Col. 10 lines 45-55). In continued view of claims 7 and 10, Nishimura et al. suggests that crystal grains exist in a direction parallel (Fig. 8a) to the channel length, a major surface of the substrate (as shown).

However, Nishimura et al. fails to disclose a crystalline semiconductor film with a drain and source region and a metal silicide formed thereon. Chen et al. develops CMOS circuits (Col. 6 lines 45-50) with a dual transistor structure (Fig. 1), where silicide technology is used on the drain and source regions of the device (Col. 2 lines 50-65). Chen et al. explored a technique where both a decrease in contact resistance was achieved and a single operation using a *salicide* technology process. This could only be achieved by using a metal silicide method applied to both the drain and source regions (Col. 2 lines 7-14)

In view of claims 2,5, 8,11,14 and 17 Nishimura et al. forms a channel region, which does not include a grain boundary (Abstract).

In view of claims 3, 6, 9, 12,15 and 18 Nishimura et al. maintains that the grain boundary in the crystalline region has none or little current values (Col. 15 lines 25-35).

Claims 19-20,22-25,27-31,33-37,39-43,45-49 and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. in view of Chen et al. and in further view of Lawson (US Pat. 5,541,640).

In view of these claims, Nishimura et al. creates a SRAM comprising: a substrate, a pair of cross-coupled driver transistors formed on the substrate, a pair of access transistors, a pair of lines electrically connected to the coupled driver transistors through the access transistors, respectively, and with line transistors, wherein at least each electrically connected to a pair of access of the cross-coupled transistors comprises a crystalline semiconductor film formed on an insulating surface over the substrate, the crystalline semiconductor film having a mono domain region in which a channel formation region is formed. Chen et al. uses a drain/source salicide process. But both Nishimura et al. and Chen et al. fail to consider the uses for which SRAM's benefit. Lawson considers SRAM devices most essential for the memory portion of a many devices. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the cross-coupled transistor techniques of Nishimura et al. with the SRAM telecommunication system of Lawson so that the advantages of a basic storage system can be realized in a variety of devices (Col. 12 lines 8-15).

In view of claims 20, 25, 31, 37, 43 and 49 Lawson utilizes video and other "display means" for producing and transmitting images (Col. 3 line 55-Col. 4 line 15).

In view of claims 23, 28, 34, 40, 46 and 52 Lawson saw intense use of a video camera system using the SRAM technology (Abstr.).

In view of claims 24, 29, 35, 41, 47 and 53 Lawson enlightens video projector technology using SRAM processors (Col. 7 line 5-12).

Claims 21, 26, 32, 38, 44, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. in view of Chen et al. and in further view of Tamai et al. (US Pat. 5,731,978).

In view of these claims, Nishimura et al. creates a SRAM comprising: a substrate, a pair of cross-coupled driver transistors formed on the substrate, a pair of access transistors, a pair of lines electrically connected to the coupled driver transistors through the access transistors, respectively, and with line transistors, wherein at least each electrically connected to a pair of access of the cross-coupled transistors comprises a crystalline semiconductor film formed on an insulating surface over the substrate, the crystalline semiconductor film having a mono domain region in which a channel formation region is formed. Chen et al. uses a drain/source metal salicide process. But both Nishimura et al. and Chen et al. fail to seek use in vehicle navigation systems. Tamai et al. describes a method where SRAM's are used in vehicle navigation systems. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the cross-coupled transistor techniques of Nishimura et al., and the salicide process of Chen et

al. with preferences for Tamai et al. nav-systems, which gathers geographical recognition algorithms into executable software programs (Col. 3 lines 47-65), and therefore offer wider technological application.

Claims 19, 22, 27, 30, 33, 36, 39, 42, 45, 48, 51 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. in view of Chen et al. in continued view of Robinson et al. (US Pat. 6,122,527).

In view of these claims, Nishimura et al. creates a SRAM comprising: a substrate, a pair of cross-coupled driver transistors formed on the substrate, a pair of access transistors, a pair of lines electrically connected to the coupled driver transistors through the access transistors, respectively, and with line transistors, wherein at least each electrically connected to a pair of access of the cross-coupled transistors comprises a crystalline semiconductor film formed on an insulating surface over the substrate, the crystalline semiconductor film having a mono domain region in which a channel formation region is formed. This follows the metal silicide method of Chen et al. applied to the mono-domain region with the drain/source. But both Nishimura et al. and Chen et al. fail to suggest a mobile phone system for SRAM use. Robinson et al. uses a cellular phone system, which uses SRAM technology (Title). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the cross-coupled transistor techniques of Nishimura et al. with the SRAM mobile phone technology of Robinson et al.

Art Unit: 2891

used many technologies in the cellular design, but saw SRAM suited better for operational and other management codes in the mobile design (#606 and #806).

Response to Applicant's Arguments

The examiner believes that the prior art of record is clear regarding the claimed invention and more specifics of the invention need to be claimed to exceed the prior art.

Final Action

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications for the examiner should be directed to Granvill Lee whose telephone number is (571) 272-1897. The examiner can be normally reached on Monday thru Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are not successful,


Art Unit: 2891

the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner
Granvill Lee
Art Unit 2891

Gl
4/11/05


DAVID ZARNEKE
PRIMARY EXAMINER
4/14/05